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IN THE

Supreme Court of the United States

OCTOBER TERM, 1979

SIDNEY A. DIAMOND, COMMISSIONER OF PATENTS AND TRADEMARKS, *Petitioner,*

v.

JOHN J. BRADLEY AND BENJAMIN S. FRANKLIN, *Respondents.*

On Writ Of Certiorari To The United States Court Of Customs And Patent Appeals

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BRIEF AMICUS CURIAE FOR HALLIBURTON SERVICES

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STATUTES:

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BRIEF AMICUS CURIAE FOR HALLIBURTON SERVICES

I. THE NATURE AND INTEREST OF THE AMICUS

This brief amicus curiae is submitted by Halliburton Services in accordance with Rule 42(2) of this Court. Letters of consent from both parties have been filed with the Clerk of the Court.

Halliburton Services has as its principal business the provision of field services to the energy industry on a worldwide basis. Halliburton Services provides equip-

ment, technology, personnel and materials to energy related industries; services that would not be economically or practically feasible for these industries to maintain on their own. Field services provided by Halliburton Services include oil well cementing, well stimulation services, formation testing, bulk handling equipment, well logging, environmental control, sea structure services and other special products and services relating to the energy industry.

In the course of its operations in the field service industry Halliburton Services has occasion to develop and use services and instruments which include microprocessors, special purpose digital computers and general purpose digital computer controls and systems. Halliburton Services' development of such systems has given rise to proprietary information and property deemed of great value. Considerable uncertainty has arisen as to the available protection afforded to such property interests under the present patent laws. Halliburton Services appears here in an attempt to assist the Court in clarifying and developing this area of the patent law in an orderly manner.

II. SUMMARY OF THE ARGUMENT

A. The quest by the Patent and Trademark Office for a *per se* rule of unpatentability for any computer implemented process, however claimed, is not correct and not in the interest of justice.

B. The Court of Customs and Patent Appeals decisions since *Parker* v. *Flook*, 437 U.S. 584 (1978) on computer implemented processes are based on decisions of this Court. These decisions are correct, logically consistent and are leading to a continuity of case law in this area.

III. ARGUMENT

A. The Patent And Trademark Office Quest For A *Per Se* Rule Of Unpatentability For Any Computer Implemented Process, However Claimed, Is Not Correct And Not In The Interest Of Justice.

The present case and its companion case of *Diamond* v. *Diehr, et al,* (No. 79-1112) represent the fifth and sixth attempts[1] by the Patent and Trademark Office (hereafter PTO) in the past ten years to obtain from this Court a *per se* rule of unpatentability for computer implemented processes under 35 USC 101. Petitioner has also filed application for Writ of Certiorari on the same basis in the related case of *Diamond* v. *Sherwood,* (79-1941), thus making a total at the present time of seven such attempts to obtain a *per se* rule of unpatentability. The present multiple attack (three simultaneous cases) represents the most extensive effort to date by Petitioner and is unprecedented.

This Court has very wisely declined to fashion such a *per se* rule of unpatentability[2] based on the facts of *Benson, Johnston, Chatfield,* or *Flook.* Your amicus respectfully submits that once again, based on the facts

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[1] Previous attempts were made (see petitioner's briefs) in *Gottschalt* v. *Benson,* 409 U.S. 63 (1972); *Dann* v. *Johnston,* 425 U.S. 219 (1976); *In re Chatfield,* 545 F2d 152 (C.C.P.A. 1976), Cert. denied 434 U.S. 875 (1977); and *Parker* v. *Flook,* 437 U.S. 584 (1978).

[2] That this Court specifically declined to fashion such a *per se* rule was eloquently stated in *Benson,* 409 U.S. 63,71 by Mr. Justice Douglas:

> "We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents. It is said that the decision precludes a patent for any program servicing a computer. We do not so hold."

of the present case, this Court should decline to fashion a *per se* rule of unpatentability for any process, however claimed, which may be implemented by or involving a digital computer.

In *Benson*[3], and as reiterated in *Flook*[4], this Court carefully defined its use of the term "algorithm" to mean a mathematical formula or principle as distinct from the more general term "process". The PTO has consistently, since *Benson*, attempted to expand the term "algorithm" to encompass any process involving a digital computer. Petitioner now labels (Pet. Br. 14) the C.C.P.A.'s careful distinction of the term "algorithm" in the mathematical sense (as distinct from a non-mathematical computer implemented process) in the instant case, as "basically illusory" because a digital computer is said to be designed "solely to perform mathematical computations". This line of thought reflects a gross oversimplification which is clearly in error.

Digital computers are designed to execute a defined instruction set, only a few of which usually involve the basic mathematical operations of addition, subtraction, multiplication and division. Most of the instruction set of a digital computer are conditional logic instructions, control instructions and instructions for moving data around in its memory. To characterize such operations

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[3] *Gottschalk* v. *Benson*, 409 U.S. 63,65

"A procedure for solving a given type of mathematical problem is known as an "algorithm"."

[4] *Parker* v. *Flook*, 437 U.S. 584

"We use the word "algorithm" in this case as we did in *Gottschalk* v. *Benson*, 409 U.S. 63,65 to mean (a) procedure for solving a given type of mathematical problem". (footnote)

as "mathematical computations" is as erroneous as characterizing an elephant as a winged mammal.

Such erroneous oversimplifications on the part of the PTO have led to vast confusion and uncertainty on the part of inventors as to the extent of protection offered their inventions under the present patent laws. Practitioners of the state-of-the-art electronic design and development, such as your amicus, have found it to be convenient and economical to use newly available "microprocessor" circuits in designing new equipment which type of equipment was previously designed employing discrete circuit elements (such as transistors, resistors, capacitors, etc.). Under the PTO logic applied to the instant case, a piece of equipment which would clearly have comprised statutory subject matter under 35 USC 101 when designed with discrete circuit elements (for example, a well logging instrument) would be nonstatutory subject matter if redesigned *and improved* using microprocessor chips. This is clearly an absurd result.

State-of-the-art design practictioners presently use discrete circuit elements, microprocessors, and programmed general purpose digital computers virtually interchangeably in new systems under development. Cost, space availability, lead time and convenience will usually dictate which one, or all, of these three equivalent modes are used to perform a given design function or specification. Why then should one design mode comprise statutory subject matter and another not, when they are functionally equivalent?

Petitioner asserts that microprocessors or digital computers programmed to perform specific instructional sequences are not new machines or new uses of existing

machines[5] in the sense of the patent laws because such instructional sequences are "inherently available operation(s) of the already patented machine" (Pet. Br. 18). This absurd proposition assumes that the inventor of the computer or microprocessor correctly foresaw each and every use to which his invention might be employed. Such an assertion is akin to a statement that the compiler of a dictionary is the true author of all the literature in a language, since such literature merely comprises words which he has defined.

Petitioner has pointed out that this Court has twice before[6] expressed that a final resolution of the patentability of computer programs *per se* would better be left to the Congress (Pet. Br. 22). Petitioner fails to recognize however, that this does not answer the question of the patentability under 35 USC 101 of *particular* computer or microprocessor implemented processes or systems being challenged under the present law, such as that of the case at bar. Moreover, the expression of such sentiments by this Court should not be construed as a mandate to enforce a *per se* rule of unpatentability in the intervening period before the Congress acts, for to do so would *de facto* usurp the very Congressional powers being commented upon by this Court in the cited passages from *Benson* and *Flook*.[7] The real problem confronting the courts and the patent bar is to establish viable guidelines in the form of rules of law and tests to

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[5] Both of which clearly comprise statutory subject matter under 35 USC 101 which states:

> § 101 Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvements thereof, may obtain a patent therefor subject to the conditions and requirements of this title.

[6] *Gottschalk* v. *Benson*, 409 U.S. at 72-73 and *Parker* v. *Flook*, 437 U.S. at 595.

[7] The Court recognized this in its recent decision in *Diamond* v. *Chakrabarty*, _____ U.S. _____, 484 PTCJ D1 at D4 (1980), in stating: "*Flook* did not announce a new principle that inventions in

determine the patentability of particular computer implemented processes under the present patent laws[8]. Your amicus respectfully submits that the Court of Customs and Patent Appeals decisions in this area since *Parker* v. *Flook*, *supra*, have made an excellent start in this process.

B. The Court Of Customs And Patent Appeals Decisions Concerning Computer Implemented Processes Since *Parker* v. *Flook* Are Correct And Are Leading To Case Law Continuity

Since this Court's decision in *Parker* v. *Flook*, *supra*, the C.C.P.A. has developed a logical two step test[9] for determining patentability of statutory subject matter under 35 USC 101. This test was developed based on the decisions of this Court in *Benson*, *Johnston* and *Flook*. The test may be stated as follows[10]:

1. Determine whether the claim directly or indirectly recites steps which are themselves calculations, formulae or equations (i.e. algorithms); and, if so

2. Further analyze the claim taken as a whole to ascertain whether the claim merely recites a

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areas not contemplated by Congress when the patent laws were enacted are unpatentable *per se*."

[8] Apparently petitioner reluctantly concedes that some computer implemented processes conceivably could be patentable (See Petitioner's Brief footnote 22, p. 15) even while seeking what amounts to a *per se* rule against their patentability.

[9] The two step test was first stated by the C.C.P.A. in *In re Freeman*, 573 F.2d 1237 (C.C.P.A. 1978) and first applied in its entirety in *In re Johnson*, 589 F.2d 1070 (C.C.P.A. 1978) after this Court's decision in *Flook*.

[10] *In re Johnson*, *supra*.

mathematical formula or a method of calculation as in *Benson* and *Flook*.

The second step of this test has been further refined by the C.C.P.A.[11] to include a determination of whether any algorithm found in the first step is implemented in a specific manner to define structural relationships between the physical elements of the claim (in apparatus claims) or to refine or limit claim steps (in process claims), the claim being otherwise statutory, it meets the requirements of 35 USC 101 for statutory subject matter.

A key element of the C.C.P.A. two step claim analysis test is that the *claim as a whole* is analyzed[12]. This principle is explicitly stated as being correct by this Court[13] in *Flook*. In the instant case, however, Petitioner urges a "point of novelty" test for dissecting a claim and discarding a portion of the claim (Pet. Br. 9), which is purported to be based on *Flook*. A careful reading of the *Flook* claim analysis as set out by this Court however, compels your amicus to conclude that the Petitioner is simply in error in this interpretation[14].

Petitioner's contention that the claim analysis outlined by this Court in *Flook* stands for the proposition that the respondent's "idea" (Pet. Br. 12), in ef-

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[11] *In re Walter*, _____ F2d _____, 205 U.S.P.Q. 397 (C.C.P.A. 1980)

[12] *In re Walter, supra, In re Johnson, supra.*

[13] *Parker* v. *Flook*, 437 U.S. at 594 and n. 16.

[14] *Parker* v. *Flook*, 437 U.S. at 594 states:

> "Respondents process is unpatentable under § 101 not because it contains a mathematical algorithm, but because once that algorithm is assumed to be in the prior art, the application, *considered as a whole*, contains no patentable invention." (Emphasis supplied)

fect, be used as prior art against him when implemented by a computer and be disregarded in analyzing the remainder of the claim, results in a hindsight approach to the issue of patentability. This Court has many times condemned such hindsight approaches, most recently for example, in the cases of *Graham* v. *Deere*, 383 U.S. 1 (1966) and *United States* v. *Adams*, 383 U.S. 39 (1966). This contention also completely ignores the fact that this Court's *Flook* claim analysis was applied to mathematical algorithms or principles of nature and not to any inventive concept, in general, which could be implemented on a computer or microprocessor. In short, your amicus is forced to conclude that Petitioner's "point of novelty" test results in a serious distortion of this Court's and other courts' prior holdings, and should thus be discarded.

Since its adoption of the two step test as set out in *In re Freeman, supra*, the C.C.P.A. has applied this test in a consistent and even handed manner. Four C.C.P.A. decisions[15], since *Flook*, have upheld the PTO Board of Appeals, while four[16] decisions have reversed the PTO Board of Appeals. These decisions have been very valuable to practitioners, such as your amicus, of state-of-the-art systems design in clearing away the fog of uncertainty as to what type of computer implemented inventions would be protectable under the present patent laws. Perhaps not every question has been, or can be, resolved solely by the application of this test. Perhaps this court will see fit in the instant case, to clarify or

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[15] *In re Maucorps*, 609 F.2d 481 (C.C.P.A. 1979); *In re Gelnovatch*, 595 F.2d 32 (C.C.P.A. 1979); and *In re Sarkar*, 588 F.2d 1330 (C.C.P.A. 1979); *In re Walter, supra.*

[16] *In re Johnson, supra*; the instant case and its companion case at bar, *Diamond* v. *Diehr, et al*; and *In re Sherwood*, 613 F.2d 809, (C.C.P.A. 1980) Pet. for Cert. pending.

modify this test further. However, the present C.C.P.A. test and the cases applying it does begin to illuminate a path through the darkness of the uncertainty surrounding this complex issue. This area of the patent law should be allowed to develop, supported by the decisions of this Court and the C.C.P.A., on a case by case basis in an orderly manner. The adoption of a *per se* rule of unpatentability for any computer implemented process or the adoption of Petitioner's proposed "point of novelty" test might be administratively expedient to the PTO, but would result in injustice and the furtherance of vast confusion.

IV. CONCLUSION

Your amicus expresses no opinion on the novelty or unobviousness in the sense of 35 USC 102 and 103 of the subject matter of the instant case. The C.C.P.A. has, however, correctly decided that patentable subject matter, in the sense of 35 USC 101, is claimed in the case at bar. This Court should recognize the correctness of this decision, and in so doing, that a class of inventions exists under the present patent laws which may be implemented by means of programmed digital computers or microprocessors.

Respectfully submitted,

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